

Translation of BMW M5 Individual High End Sound System review article in Auto, Motor und Sport, 8/2007:

STREET MUSICIAN

With a novel digital sound technology, BMW intends to set a new benchmark for automotive sound systems in its 5-series. The equipment is here tested in the BMW M5.

Music signals do not have it easy when they are to produce sound in a car. After leaving the CD player, the amplifier will start to distort the impulses. After that, the loudspeakers affect the tonality and also distort the relative timing of impulses, so that they will not arrive in the correct sequence. Finally, reflexes and resonances in the narrow and segmented interior compartment of the car will modify the character of the music signal dramatically.

It is a wonder that there nevertheless exist good-sounding car audio systems. This is in many cases today accomplished by digital electronics, which compensates for the errors at least with respect to the tonal character.

The High-End Sound system developed by the audio specialists of BMW M GmbH (ready for delivery also in all normal 5-series and in the M6) goes one step further: With the so-called Dirac technology, the unpleasant changes of the music signal in the time domain are pre-compensated so that the impulses retain their original character. Simplified, one can think of the Dirac technology as a Chassis with electronically regulated suspension, that already has obtained exact knowledge of all the irregularities of the road beforehand, by a detailed cartography.

This places high demands on the performance of the digital electronics. It is best if many problems can be avoided altogether, by using good components. BMW therefore used top loudspeakers from the loudspeaker workshop LPG in Ulm. They are quasi racing cars among loudspeakers, since they contain powerful motors (Neodymium magnets) and a very stiff, but also light chassis (Honeycomb structure membranes). These transducers produce a high sound volume at a low power. BMW promises 112 Decibels as maximal sound pressure, down to the lowest bass tones.

A high efficiency would not have been urgently necessary, since an extremely powerful 885 Watt digital amplifier drives the speakers to maximum output. Also here one may use an analogy to the car: The extremely high efficiency acts as the powerful torque of a car with high cylinder volume. Without having to test the power limits, the power output, or here the music rendition, is obtained easier.

Up to 16 loudspeakers and nine channels participate in the music reproduction. The suitable interaction of all components requires an enormous know-how from the acoustical engineers at BMW. The existence of excellent loudspeaker locations simplified the task. For example, the large 22 centimeter bass speakers are located centrally, below the C-column, in separate housings.

Furthermore, the BMW system provides a surround mode for the listeners. But it is enough to listen to the good old stereo mode to become enthralled from the first moment. Already the quiet initial chords, the soft violin tunes, hearing the very weak sounds of the flaps of the wind instruments and the warm bass fundament charms us.

However, a good reproduction of classical music is often a bad omen for the other side of the music world: Electro-tracks with lots of bass. This is not true at BMW. The bass tunes hit with such a precision, power and depth, that the trousers of the passengers flutter like a UKW-antenna at 200 kph speed. The volume is good at all frequencies. However, it is not necessary to listen at high volumes. Already at low volumes, the tones sound charmingly airy, with an uncommonly well sounding and broad sound panorama than stretches over the whole instrument panel.

Only bad recordings sound badly. But that is consistent, since the BMW sound reproduction system adds remarkably little sound character on its own, it reproduces the recordings with high fidelity in details. A higher compliment can hardly be given to a sound reproduction system. To pay 2100 Euro for the probably most impressive sound system in the world with respect to stereo reproduction, that is a very good deal indeed.

Evaluation:

+++ = excellent
++ = very good
+ = good

Balance: ++
Resolution: +++
Spatial perception: ++
Bass quality: +++
Fun factor: +++
Surround: + (Note: not designed by Dirac)
low volume quality: ++
Radio sound: ++
Rear sound: +
Max. sound pressure: ++